

VPDES PERMIT FACT SHEET

This document gives pertinent information concerning the reissuance of the VPDES permit listed below. This permit is being processed as a *Minor, Industrial permit*. The effluent limitations contained in this permit will maintain the Water Quality Standards of 9 VAC 25-260 et. seq. The discharge results from the treating acidic drainage from a reclaimed iron pyrite mine. This permit action consists of limiting pH and total suspended solids and includes monitoring for total iron and acute whole effluent toxicity. The SIC Code for this facility is 1479.

1. Owner Name and Applicant Address:

Honeywell International, Inc.
101 Columbia Road
PO Box 2105
Morristown, NJ 07962

Facility Name/Location:

Gossan Mine Site
Honeywell International, Inc.
101 Columbia Road
PO Box 2105
Morristown, NJ 07962

Location: State Route 607, near Galax, Virginia

2. Permit No. VA0082333 Existing Permit Expiration Date: 07/05/2009

3. Permit/Owner Contact:

Prashant Gupta
Remediation Manager
Remediation and Evaluation Services
Honeywell International, Inc.
101 Columbia Road
PO Box 2105
Morristown, NJ 07962

Telephone No: 804-530-6211

4. Application Complete Date: February 20, 2009

Permit Drafted By: Steve E. Artrip Steve E. Artrip Date: 4/7/2009
Southwest Regional Office

Reviewed By: Mark S. Trent MS Trent Date: 4-7-2009
Southwest Regional Office

Public Comment Period Dates: from 5/4/2009 to 6/4/2009 SEA

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VPDES Permit No. VA0082333

Outfall 001

5. Receiving Stream Name: Chestnut Creek

Basin: New River
Subbasin: None
Special Standards: v
Section: 2
Class: IV
Rivermile: 9-CST008.0

The discharge from outfall 001 is directed into Skunk Branch, at a location approximately one half mile upstream of its confluence with Chestnut Creek. Although the discharge from the treatment system is directed to Skunk Branch, a tributary to Chestnut Creek, effluent limitations for the permit are calculated at levels to protect Chestnut Creek because Skunk Branch is an intermittent stream for which Allied has ownership rights from its emergence as a spring, to the banks of Chestnut Creek at the New River Trail State Park (old N&W Railway Track). The DEQ staff applies the water quality standards at the point where Skunk Branch enters Chestnut Creek, and has calculated permit limitations in accordance with OWRM guidance 91-002 for the protection of Chestnut Creek.

The estimated low flow conditions of the receiving stream presented below have been developed using a continuous record gauge on Chestnut Creek at Galax, Virginia (USGS #031650000). The figures have been adjusted to compensate for the upstream water withdrawal from City of Galax Water Treatment Plant.

7-Day, 10-Year Low Flow:	10.43 MGD
1-Day, 10-Year Low Flow:	8.75 MGD
30-Day, 5-Year Low Flow:	16.38 MGD
Harmonic Mean Flow:	35.92 MGD

The Water Quality standards require the Board to use mixing zone concepts in evaluating permit limits for acute and chronic toxicity to ensure that the effluent from the discharge does not induce toxicity to passing or drifting organisms. The Department has established a procedure to evaluate the mixing zone to determine the portion of the low flow volumes (i.e. 7Q10, 1Q10, etc.) which may be used in a simple mixing calculation to determine the wasteload allocations for each conservative pollutant. This procedure utilizes a DEQ-OWPS model to estimate a portion of the low flow which may be used as a mixing zone in accordance with 9 VAC 25-260.20.B.

Based upon stream flow information at the discharges and the results of the model, the staff has made a determination that a complete mix assumption is appropriate to evaluate the potential acute and chronic effects of the discharge. The model results indicate that the evaluation of the potential acute effects of the discharge be calculated using 100% of the 1Q10 (8.75 MGD) and the evaluation of the potential chronic effects of the discharge be calculated using 100% of the 7Q10 (10.43 MGD). The output of this mixing zone model is included as Attachment 1.

Tidal: No On 303(d) list? Yes

6. Operator License Requirements: None

7. Reliability Class: - Not Applicable

8. Permit Characterization:

<input checked="" type="checkbox"/> Private	<input type="checkbox"/> Federal
<input type="checkbox"/> State	<input type="checkbox"/> Other
<input type="checkbox"/> POTW	<input type="checkbox"/> Possible Interstate Effect
<input type="checkbox"/> Municipal	<input type="checkbox"/> Intermin Limits in Other Document

9. Description of Facility and Wastewater Treatment:

Facility Description:

Honeywell International, Inc. owns property in Carroll County, Virginia which includes the site of the former Allied Chemical Gossan Mines. From 1905 to 1925, Allied Chemical mined sulfide ore (pyrrhotite) from two open pits on the property. In 1925, and continuing to 1962, Allied Chemical operated an underground mine which became interconnected with the two open pits (Huey pit and Bombarger pit). A contractor continued to mine a third pit (Howard pit) until all mining activities were discontinued at the site in 1975.

During the active operation of the underground mine, a tunnel was driven from the underground works to Chestnut Creek near Chestnut Yard. The tunnel, known as Ingraham tunnel, served to de-water the underground mine. Since the mine was interconnected with the open mine pits, it also drained waters collecting in the pits.

During the development of the underground mine, a mine shaft (Landau Mine Shaft) was constructed near Bombarger pit. Ore was extracted from the shaft and processed in an adjacent flotation mill. The mill produced a waste which was placed in a fill near the shaft to create a tailings pile in the head of a small valley known as Red Branch.

Since iron pyrites readily oxidize to produce acidic mine drainage, runoff from the tailings pile and drainage from the Ingraham portal created discharges with high iron and low pH into Chestnut Creek and Red Branch. In an effort to abate the pollution problems from the site, Allied plugged the portal at Ingraham tunnel in 1977. This effectively blocked further discharge from the underground mine workings. Also during this time, the company reclaimed at the tailings pile site and directed the runoff from the tailings pile into the old mine works. They also reclaimed the area surrounding Howard pit.

After the tunnel was sealed, the water was contained within the mine void until it began to overflow from Huey pit on January 28, 1983. The company evaluated several treatment options, and in 1988, they installed a wetlands treatment system for the Huey pit overflow.

Initially, the collection of the runoff and the establishment of the pumping facilities for the Red Branch site was performed under the provisions of a State No-Discharge Certificate (IW-ND-979), and a Consent Special Order, but since 1990, the discharge from the site has been authorized by VPDES Permit No. VA0082333. The State No-Discharge Certificate was revoked upon issuance of the discharge permit, and the Consent Special Order was canceled by the Board on September 19, 1994 after the reissuance of the permit.

A site diagram is included as Attachment 2.

Treatment:

The mine water overflow from Huey Pit, which includes surface water runoff and groundwater seepage from the reclaimed tailings pile in Red Branch, is directed through a multi-celled treatment system and discharged into Skunk Branch at outfall 001. Although the initial VPDES permit addressed three potential discharge points, upgrades to the pumping system in 1994 eliminated all routine discharges into Red Branch. After the 1994 permit reissuance, the company enlarged the Red Branch pump station so that all of the water from the Red Branch impoundment is pumped into the nearby mine shaft, commingled with the mine water, and discharged through the Huey pit wetland treatment system. Therefore, 002 and 003 were deleted from the permit, and outfall 002 was listed only as a potential by-pass point in accordance with 9 VAC 25-31-190.M.

In order to meet the pH limitations and iron discharge requirements of the permit, the company installed a wetlands treatment system in 1988. This system consisted of eight cells in series, each containing a limestone gravel base overlain with an organic substrate, planted with hydrophilic plants.

This initial treatment scheme required routine batch treatment of the pit with hydrated lime and mechanical aeration of the pit waters with a portable air compressor. The additional neutralization and aeration was necessary in order to precipitate much of the iron in the pit, prior to the wastewater entering the wetland treatment system. However, accumulations of iron precipitant (sludge) within the pit and within the wetland cells had diminished the efficiency of this initial treatment system, and the company modified the treatment scheme and began reconstructing the treatment system in 2003.

This modified wetlands treatment system was initially proposed in a "Basis of Design Report" (BODR) which was submitted to the DEQ in June, 2003. The BODR proposed to eliminate the batch lime treatment of Huey pit, and install a continuous feed quicklime treatment system on the pit overflow. Since the neutralization will occur outside of the mine pit, the change necessitated that the treatment system be modified to provide for sedimentation of the iron precipitant prior to entering the constructed wetlands. Therefore, in addition to the reconstruction of the wetlands system, the company has reconfigured the entire treatment system to improve the efficiency of treatment.

The treatment process now consists of the quicklime addition to the overflow of the pit to neutralize the acidity, followed by a cascading aeration channel to enhance oxidation of the dissolved iron, two sedimentation basins arranged in series and a multi-cell wetlands treatment system. A floating J-tube decanter assembly, with valving allows the operator to control the flow from Huey Pit using pinch valve outlets. The wetlands treatment portion of the system consists of six shallow basins arranged in series which were lined with limestone and an organic substrate, and planted with cattails and other hydrophilic plants. The plant material promotes further oxidation and precipitation of the insoluble iron, and the system serves as a "polishing" treatment to the neutralization and sedimentation of the mine water within the sedimentation basins. The first two cells of the wetland treatment system were converted to settling basins during 2004.

The neutralization of the pit overflow is performed using a waterwheel driven lime feeder manufactured by Aquafix Water Treatment Systems, Inc. The feeder introduces dry pebble quicklime into an open channel which conveys the pit overflow discharge. Initially the water wheel was operated by water from Spring Branch, which is an uncontaminated spring water flow, which is currently channeled around Huey Pit and the WTS. During 2006 the water wheel lime feeder was modified to allow electricity to operate the lime silo. The lime silo can still be operated by water wheel in case of a power outage to Gossan Mine. Additional upgrades to the treatment system include a concrete aerated mixing basin with a 30-minute hydraulic retention time, which was installed between the lime feeder and the first settling basin in 2006.

The basin is approximately 3,400 gallons with dimensions of 6.5 feet by 12.5 feet and 5.67 feet tall. This mixing basin allows more complete lime utilization and iron oxidation before the AMD-lime slurry mixture enters the settling basin.

Recent modification and upgrades to the treatment system during 2007 include removal and replacement of the mulch in the wetland cells.

These modifications of the treatment system should increase the efficiency of treatment at the site, and provide a more consistent and higher quality effluent.

A schematic diagram of this system is included as *Attachment 3*.

10. Residuals Management Use or Disposal:

The oxidation of pyrite (FeSO_4) in the presence of water and oxygen produces sulfuric acid and an iron precipitant. In the acidic environment created by this oxidation process, much of the iron is present in a dissolved state. However, as the pH is elevated to neutral, the soluble iron is converted to insoluble ferric hydroxide (FeOH_3) and precipitates from solution. Since the lime addition system will elevate the pH of the Huey Pit overflow prior to its discharge into the sedimentation basins, the basins will accumulate residuals (i.e. sludge) which will require routine disposal.

The residuals primarily consist of the insoluble ferric hydroxide, the un-dissolved portion of the pelletized hydrated lime, and other precipitated byproducts of the neutralization of the acidic mine drainage. The accumulated sludge is removed from the sediment basins using a sludge pump to pump the by-products back into the open Bombarger pit. Although the water level is well below the rim of Bombarger pit, this pit is hydrologically connected with Huey pit. All sludge, and any runoff from the deposited waste will re-enter the mine, and will ultimately return to the treatment process.

Removal of the accumulated residuals from the end of the treatment process is essential in order to prevent the accumulated iron and suspended solids from entering the receiving stream. The approved Operation and Maintenance Manual (2004) indicates that sludge removal is planned on a weekly basis; however violations of the iron loading (39 kg/d) and TSS concentrations have continued during this permit term. Therefore, the development of a new/modified plan to remove the sludge more frequently and the establishment of proactive benchmarks that will trigger the action necessary to prevent further violations are being required in the proposed draft permit. (See Other Special Conditions Item 19.g below).

11. Discharge Location Description:

Name: Galax, VA Quadrangle
Map Number: 21-B
See Attachment 4 for a location map of the outfall.

12. Material Storage:

Dry pebble quicklime will be stored onsite in a 30 ton hopper bottom silo which will feed the neutralization system. The product will be transferred from the truck to the hopper pneumatically, and all storage will be enclosed to prevent contact with precipitation.

13. Ambient Water Quality Information:

This facility discharges to Chestnut Creek. Chestnut Creek is listed in the current 2008 303 (d) integrated report for non attainment of the general standard for benthic impairment and violations of the water quality standard for E.coli. The source of the impairment is listed as urban non-point but also cites resource extraction from the former mining operations at the Honeywell site. The AWQM station, 9-CST002.64, has historically indicated an impairment of the aquatic life use. A TMDL was developed by DEQ during 2005 and 2006 and received EPA approval on 06/07/2006. The Virginia SWCB approval date was 03/09/07. Additional details regarding the TMDL are found in Item 25. below.

14. Antidegradation Review & Comments:

Tier I (X) Tier II Tier III

The State Water Control Board's Water Quality Standards includes an antidegradation policy (9 VAC 25-260-30). All state surface waters are provided one of three levels of antidegradation protection. For Tier 1 or existing use protection, existing uses of the water body and the water quality to protect these uses must be maintained. Tier 2 water bodies have water quality that is better than the water quality standards. Significant lowering of the water quality of Tier 2 waters is not allowed without an evaluation of the economic and social impacts. Tier 3 water bodies are exceptional waters and are so designated by regulatory amendment. The antidegradation policy prohibits new or expanded discharges into exceptional waters.

The antidegradation review begins with a Tier determination. Because Chestnut Creek has been identified as "impaired" and a TMDL has been developed based upon non-attainment of the General Standard and the E.coli water quality standard, the receiving water is considered to be classified as "Tier 1" and the permit is written to maintain the water quality standards of the stream.

15. Site Inspection: Date: 03/28/2007
Technical Inspection Performed by: Danny L. Petty,
Water Compliance Specialist Senior, DEQ-SWRO.

16. Effluent Screening & Limitation Development:

Flows:

The discharge from outfall 001 is a groundwater discharge from overflowing mine workings. Since the source of the discharge from the facility is dependant upon rainfall activity, it is extremely unlikely that maximum discharge from the operation would occur during drought flow conditions (i.e. 1Q10 & 7Q10). Therefore, the evaluation of the potential acute and chronic effects of the wastewater will be performed with the 90th percentile flow values as reported on the monthly discharge monitoring reports submitted during the last permit term.

A review of the discharge monitoring reports submitted during the last permit term reported a maximum discharge flow of 0.396 MGD and a 4-year average of the maximum daily discharges to be 0.14 MGD. The 90th percentile daily maximum flow from the DMR's filed during the last permit term is 0.252 MGD.

For the purpose of evaluating Whole Effluent Toxicity potential impacts to the receiving stream, the in-stream waste concentration (IWC) of the effluent in the receiving stream is estimated to be less than 1% at 1Q10 and 7Q10 drought conditions. Since the IWC for the facility has been estimated to be less than 1%, evaluation of potential whole effluent toxicity from the discharge has historically focused on the potential acute toxicity of the discharge.

Chemical Data:

In addition to the routine monitoring required by Part I.A of the permit, Honeywell, and its predecessor Allied Signal, Inc. has performed extensive chemical analyses of the wastewater from 001 during previous permit terms, and as part of the "Basis of Design Report" submitted in 2003. The analytical data collected during previous permit terms had initially identified copper and zinc as additional potential pollutants of concern at outfall 001; however, a previous reasonable potential evaluation of the test results concluded that water quality based effluent limits for copper and zinc were unnecessary to protect the water quality standards of Chestnut Creek.

Additional water quality standards monitoring was performed in conjunction with the treatment system evaluation performed by Parsons, and submitted as part of the Basis of Design Report submitted in 2003. Although most potential pollutants analyzed were not present in levels above the detection limits of the tests, the results indicated a presence of Aluminum, Iron, Manganese, and Zinc. Similarly, DEQ conducted a routine sampling inspection at the facility on March 15, 2001, and analyzed the effluent from outfall 001 for 13 metal compounds (lead, iron, copper, chromium, beryllium, barium, arsenic, thallium, magnesium, manganese, mercury and selenium). The results of this screening indicated a detectable presence of iron, copper, barium manganese and magnesium). Additional metals data were provided on Part V of EPA Application Form 2C of the current reissuance application and all heavy metals concentrations are very similar as past metals data.

A summary of these screening results is listed below, and the information will be used to determine compliance with water quality standards, and to determine if water quality based effluent limits are necessary to protect the receiving stream.

Parameter	12/16/2008	7/30/02 Results	3/15/2001 Results
Aluminum	1060 µg/l	1060 µg/l	
Barium			17 µg/l
Copper			30 µg/l
Total Iron	90400 µg/l	3940 µg/l	
Dissolved Iron		3300 µg/l	540 µg/l
Magnesium			111 µg/l
Manganese	3310 µg/l	3300 µg/l	5320 µg/l
Zinc	67 µg/l	67 µg/l	

Although numeric water quality standards have been established for many potential pollutants, of the seven parameters detected in the effluent in outfall 001, above only copper and zinc have numeric water quality standards which apply in Chestnut Creek. Many of the standards for metal compounds are based upon equations which require ambient levels of hardness be used to determine the appropriate standard for the receiving stream. Data from a downstream STORET Station (9-CST002.64) on Chestnut Creek was referenced to estimate hardness conditions at the discharge. The average hardness for that station is 32 mg/l. Using this value for hardness, the water quality standards for Copper and Zinc are as follows:

Pollutant	Acute Standard	Chronic Standard	Human Health Standard
Copper	4.6 µg/l	3.4 µg/l	N/A
Zinc	46 µg/l	46 µg/l	N/A

The aquatic toxicity water quality standards for these metal compounds are expressed in terms of the dissolved portion of the pollutant because it is the dissolved fraction of metal compounds which are available for uptake to biological systems. However, in the following worst case analysis, the total copper and total zinc analyses are assumed to be present as the dissolved fraction.

Information regarding the background levels of pollutants in the receiving stream is desirable in order to determine the potential combined effect of the additional pollutant contributions from the discharge. However, no reliable ambient water quality data is available for this portion of the main stem New River watershed. Because no analysis information is available, the background concentrations of all pollutants are assumed to be zero.

The wasteload allocations for each of the pollutants listed above are calculated using the following formula to estimate a steady state complete mix of a free flowing stream:

Where:

$$WLA = \frac{Std[(Q_s * f) + Q_d] - [(Q_s * f) * C_s]}{Q_d}$$

WLA = Wasteload Allocation
Std = stream standard
Q_s = stream flow
Q_d = effluent flow
C_s = background
f = fraction of the flow

The calculations are based upon the Water Quality Standards, critical flow volumes and mix assumption stated above in Item 5. Using these assumptions the Wasteload Allocations for each pollutant are assigned as follows:

Pollutant	Acute WLA - 001	Chronic WLA - 001
Copper	164 µg/l	144 µg/l
Zinc	1643 µg/l	1950 µg/l

The monitoring data which was submitted for outfall 001 has been evaluated to determine the need for water quality based permit limits for each parameter using the OWRM's WLA statistical model. The program output is included as Attachment 5. The results of this analysis conclude that based upon the monitoring results conducted during the last permit term, and the assumptions outlined above, water quality based effluent limits for copper and zinc are unnecessary to protect the water quality standards of Chestnut Creek. Because of the relatively low volumes and concentrations of potential pollutants discharged, and the dilution provided by Chestnut Creek, the discharge of copper and zinc pose minimal threat to the water quality standards of the receiving stream.

Whole Effluent Toxicity:

Since 1994, the facility has conducted routine whole effluent biological toxicity tests on the discharge from the wetland treatment system. During the permit term which became effective in 1994, the company conducted a toxicity screening which consisted of quarterly, acute toxicity using both an vertebrate and invertebrate species followed by annual re-tests for the duration of the permit. The results of this initial screening passed the technical review criteria, and the treated effluent from outfall 001 was not considered to have demonstrated actual or potential toxicity as defined by the policies of the Department.

During the 1999 reissuance, the annual testing requirements were continued to ensure that the level of treatment is sufficient to prevent toxicity in the receiving stream. The special conditions provided a review criteria which would trigger further investigation of the discharge if this benchmark were not maintained. In 2002, several samples failed the technical review criteria of an LC50 greater than or equal to 100% effluent, and the company initiated a toxicity identification evaluation.

A toxicity identification evaluation (TIE) report was submitted to the SWRO on July 3, 2002, which concluded that metal compounds were likely the cause of the potential toxicity of the samples. The TIE process was conducted in accordance with USEPA Guidance for Phase I TIE testing (EPA/600/6-91/003) and subjected effluent through a series of physical and/or chemical manipulations (i.e. neutralization, aeration, filtration, chelation, etc.) to determine its effect upon the potential toxicity of the wastewater. The results indicated that the filtration test and the EDTA chelation test both had a positive effect upon the toxicity results. Since the chelating agent EDTA binds with metal cations to form non-toxic complexes, the report concluded that the likely cause of the potential toxicity was the presence of soluble metal compounds, and the TIE recommended that the company pursue treatability options instead of additional pollutant specific identification.

In response to this report and other issues regarding the existing treatment system, Honeywell contracted a consultant (Parsons) to conduct an evaluation of the existing treatment system and provide recommendations for treatment options. A summary of their findings, and a proposal to modify the treatment system was provided to the DEQ in the Basis of Design Report submitted on June 23, 2003. The company has implemented the recommendations of the BODR and continues to make adjustments/enhancements to the treatment system in order to obtain optimal performance from the water treatment process.

The results of the biological data since monitoring began in 1999 are not consistent and this may be a consequence from the different treatment schemes that have been used at Huey Pit. The previous evaluation indicated an Acute endpoint of 7%. Although the current application indicated that discharge flows have changed slightly it is important to retain the 7% acute endpoint in order to evaluate the effectiveness of the treatment system as the company continues to make operational and maintenance decisions on the waste treatment system. Therefore, using Best Professional Judgment Acute Biological monitoring will be continued in the reissuance permit using the same 7% (14.3 TUa) endpoint. A formal evaluation for a Whole Effluent Toxicity Limit was conducted in the previous permit action and No Limit was necessary. The monitoring results from the current permit term has been added and the output indicates No Limit was necessary. See Attachment 6 for the Biological Monitoring data and evaluation of limits.

Effluent Limitations:

Part I.A of the existing permit imposes effluent limitations on pH and total suspended solids, and requires monitoring for total iron and flow. The following is a summary of the basis for each limit.

pH: The pH limitation is based upon a minimum pH level of the discharge which will maintain the water quality standards in Chestnut Creek during low flow conditions. During the last five years, the pH levels of the discharge from the wetland treatment system ranged from 5.7 to 8.4 S.U. The pH limitation of 4.5 S.U. was established in 1994, and is based upon a wasteload allocation for pH at the mouth of Skunk Branch.

The allocation was calculated similar to that conducted for the conservative pollutants as outlined above. However, since pH is an expression of the logarithm of the hydrogen ion concentration, the values for the stream standard and the background levels were converted to their respective hydrogen ion concentrations using the following equations:

$$pH = \log\left(\frac{1}{H^+}\right)$$

or,

$$H^+ = \frac{1}{10^{pH}}$$

The resulting H^+ concentrations are then utilized as C_o (stream standard) and C_s (Mean background concentration) in the WLA equation outlined previously. The WLA- H^+ concentration is subsequently converted to a pH value. Ambient pH conditions for the receiving stream were taken from monitoring data from STORET Station 21VASWCB 9-CST010.45 located at RT. 721 bridge, upstream of the Allied site. However, instead of using the minimum pH value of the STORET data, the WLA calculations were made using the 90th percentile of the data since the probability of the simultaneous occurrence of minimum pH and minimum flow is remote. Using these modifications to the WLA formula, the WLA-pH for the discharge to Chestnut Creek during 7Q10 flow is 4.5 S.U. and the WLA-pH for the maximum discharge during 1Q10 flow conditions is 4.4 S.U.

Since a worst case evaluation has determined that a discharge of 4.5 S.U. should not lower the pH of the receiving stream below 6.0, the recommended lower limit for discharges was established to be 4.5 S.U. Although this model is a highly simplified interpretation of the effect of the discharge pH on the receiving stream, and does not take into account the complex interaction of the hydrogen ions with other compounds in the water, it should provide an adequate margin of protection to ensure that the pH standards in the receiving stream are not contravened. Therefore, no changes to the existing pH limitations are proposed in the draft permit.

TSS: The existing permit contains a total suspended solids limitation of 50 mg/l monthly average and 60 mg/l daily maximum. The limitations are based upon standard Best Professional Judgment effluent limitations for mineral mining activity, and is consistent with similar technology based effluent limits for TSS. No changes are proposed.

Iron: Although Virginia does not have toxicity based water quality standards for iron, EPA has published criteria levels of 1.0 mg/l to protect aquatic life, and 0.3 mg/l for domestic water supplies. The publication Quality Criteria for Water cites that high concentrations of iron in the water column precipitate readily and is detrimental to fish eggs and bottom dwelling fish food organisms by coating the substrate of the stream, and in some instances high concentrations of iron precipitate (floc) has been observed to coat fish gill surfaces. In order to minimize the potential for these adverse affects, the EPA publication recommends a maximum in stream concentration of 1.0 mg/l.

The existing permit required monthly monitoring of the total iron concentration of the discharge, and included a special condition which requires the company to immediately take action to reduce the discharge of iron (i.e. initiate treatment) at any time the discharge exceeds 39 kg/d of iron. These requirements were placed in the permit in lieu of a simple daily maximum effluent limitation in order to allow sufficient time to address the changing conditions of the discharge. The 39 kg/d level is based upon the maximum allowable discharge which would maintain the 1.0 mg/l water quality criterion for iron during worst case conditions of high discharge flow (90th percentile) during drought flow (7Q10) conditions.

The total iron monitoring requirement listed in Part I.A, and the special condition in Part I.B which limits the discharge of iron are required at a frequency of once per month, and an action level to be implemented after a single occurrence of a 39 kg/d discharge.

Basis for Effluent Limitations:

PARAMETER	(a) BASIS FOR LIMIT S	DISCHARGE LIMITS (b) Final Limitations Effective From: July 6, 2009 - To July 5, 2014				MONITORING REQUIREMENTS	
		MONTHLY AVERAGE	WEEKLY AVERAGE	MIN	MAX	FREQUENCY	SAMPLE TYPE (c)
Flow	NA	NL	NA	NA	NL	1/Week	Estimate
Total Iron (kg/d)	NA	NL	NA	NA	NL	1/Month	Grab
Total Suspended Solids (mg/l)	2	50	NA	NA	60	1/Month	Grab
pH (S.U.)	3	NA	NA	4.5	9.0	1/Week	Grab

NA = Not Applicable
NL = No Limitations

- a.
 1. Federal Effluent guidelines
 2. Best Engineering Judgment:
 3. Water Quality standard
 4. Other (e.g. wasteload allocation model)
 5. Best Professional Judgment
- b. Express limits in units of concentration (mg/l).
- c. Estimated average daily flowrate shall be based on the most accurate method or device available such as: weir, potable water meter, pump rates, etc.

17. Antibacksliding Statement:

Compliance with antibacksliding provisions of the Permit Regulation (9 VAC 25-31-220.1) have been achieved since the effluent limitations proposed in the reissuance are at least as stringent to those in the current permit.

18. Compliance Schedules:

No schedules of compliance are included in this permit.

19. Other Special Conditions, Part I. C.:

- a. *EPA Industrial Reopener*: The permit includes a standard reopener to address potential changes in the permit which may be required as a result of changes in effluent standards or limitations promulgated or approved under Section 307(a)(2) of the Clean Water Act. (Part I.B.1)

Rationale: 40 CFR 122.44 requires all permits for primary industrial categories to include the requirements of Section 307 (a)(2) of the Clean Water Act. This condition is continued from the existing permit.

- b. *Notification Levels*:

The permit includes a special condition which requires the permittee to notify the Department if they discharge certain toxic pollutants above established concentrations. (Part I.B.2)

Rationale: Required by VPDES Permit Regulation, 9 VAC 25-31-200 A for all manufacturing, commercial, mining, and silvicultural discharges.

- c. *Erosion Control*: The permit includes a special condition which requires the permittee to continue to maintain the existing erosion control measures employed at the site (Part I.B.3).

Rationale: Although the reclamation and re-vegetation of the site has been successful, and the company has stabilized the soil cover in the reclaimed areas, the special condition is included to ensure the continued implementation of erosion control measures.

- d. *Material Storage Special Condition*: The permit includes a special condition which addresses material storage. (Part I.B.4)

Rationale: 9 VAC 25-31-50 A prohibits the discharge of any wastes into State waters unless authorized by permit. Code of Virginia 62.1-44.16 and 62.1-44.17 authorizes the Board to regulate the discharge of industrial waste or other waste.

- e. *Iron Monitoring:* A special condition is included in the permit which requires the owner to monitor total iron once per month, and to begin treatment of Huey Pit whenever the iron loading from the discharge exceeds 39 kg/day (Part I.B.5).

Rationale: The existing permit required monthly monitoring of the total iron concentration of the discharge, and included a special condition which requires the company to immediately take action to reduce the discharge of iron (i.e. initiate treatment) at any time the discharge exceeds 39 kg/d of iron. These requirements were placed in the permit in lieu of a simple daily maximum effluent limitation in order to allow sufficient time to address the changing conditions of the discharge. The 39 kg/d level is based upon the maximum allowable discharge which would maintain the 1.0 mg/l water quality criterion for iron during worst case conditions of high discharge flow (90th percentile) during drought flows.

- f. *Operations and Maintenance Manual:*

Rationale: Required by Code of Virginia § 62.1-44.16; VPDES Permit Regulation, 9 VAC 25-31-190 E, and 40 CFR 122.41(e). These require proper operation and maintenance of the permitted facility. Compliance with an approved O&M manual ensures this. (Part I.B.6)

- g. *By-Pass Location:* A special condition is included in the permit which identifies outfall 002 as a by-pass point, and requires the permittee to notify the regional office in the event of discharge. (Part I.B.7)

Rationale: This condition is extended from the existing permit, and is included to ensure that the regional office is notified of the discharge of untreated waste water.

- h. *Tunnel Seal Evaluation:* A special condition is included in the permit which requires the owner to conduct an engineering evaluation of the stability of the concrete seal in Ingraham tunnel. A report of the evaluation shall be submitted with the reissuance application, or within 180 days prior to the expiration date of the permit. (Part I.B.8)

Rationale: This condition is extended from the existing permit, and is included to ensure that the regional office is notified of any potential changes in the integrity of mine seal.

- i. *Total Maximum Daily Load (TMDL) Reopener:* The permit includes a special condition which allows the permit to be modified or revoked and reissued if any approved wasteload allocation procedure, pursuant to Section 303(d) of the Clean Water Act, imposes wasteload allocations, limits or conditions on the facility that are not consistent with the permit requirements. (Part I.B.9)

Rationale: Section 303(d) of the Clean Water Act requires that Total Maximum Daily Loads (TMDLs) be developed for streams listed as impaired. This special condition is to allow the permit to be reopened if necessary to bring it into compliance with any applicable TMDL approved for the receiving stream. The re-opener recognizes that, according to Section 402(o)(1) of the Clean Water Act, limits and/or conditions may be either more or less stringent than those contained in this permit. Specifically, they can be relaxed if they are the result of a TMDL, basin plan, or other wasteload allocation prepared under section 303 of the Act.

- j. *Biological Monitoring:* A special condition is included in the permit which requires annual acute toxicity testing (Part I.B.10)

Rationale: See Item 16 above.

- k. *Compliance Reporting Under Part I.A.:*

Rationale: Authorized by VPDES Permit Regulation, 9 VAC 25-31-190 J 4 and 220 I. This condition is necessary when toxic pollutants are monitored by the permittee and a maximum level of quantification and/or a specific analytical method is required in order to assess compliance with a permit limit or to compare effluent quality with a numeric criterion. The condition also establishes protocols for calculation of reported values. (Part I.B.11)

- l. *Part II, Conditions Applicable to All Permits:*

Rationale: VPDES Permit Regulation, 9 VAC 25-31-190 requires all VPDES permits to contain or specifically cite the conditions listed. (Part II)

20. NPDES Permit Rating Work Sheet:

The staff has completed the NPDES Permit Rating Worksheet and has determined that the facility does not meet the criteria to be classified as a major source. The completed worksheet is on file at the regional office. Total Score: 15.

21. Changes to Permit:

All special conditions (*EPA Industrial Reopener, Notification Levels, Erosion Control, Material Storage, Iron Monitoring, TMDL, O & M update, By-pass location, Tunnel Seal Evaluation, TMDL, Biological Monitoring and Compliance Reporting Requirements*) were updated in accordance with the guidance provided in the December 2001 permit manual that is updated on a continual basis. Part II, Conditions applicable to all VPDES permits is in accordance with 9 VAC 25-31-10 et seq., amended December 2, 2004, effective February 9, 2005. Parts I, II. and III of the revised Virginia Draft Permit Submission Checklist is included as an addendum to this Fact Sheet. (See Attachment No. 7)

22. Variances/Alternate Limits or Conditions:

Storm Water Associated with Industrial Activity: Although the SIC code listed on the application (SIC 1479) is included in the regulations as having a storm water associated with industrial activity, no storm water management special conditions are included in the permit. Since the discharge consists principally of ground water from closed mine workings, and the only storm water runoff is from the reclaimed surface areas surrounding the mine, the staff has determined that storm water management conditions are unnecessary. The existing erosion control and management practices required by Part I.B.3 should be sufficient to address potential storm water impacts. Guidance and technical information about erosion control should be derived from Virginia's Erosion and Sediment Control Handbook third edition 1992.

23. Public Notice Information required by 9 VAC 25-31-280 B:

DEQ accepts comments and requests for public hearing by e-mail, fax or postal mail. All comments must be in writing and be received by DEQ during the comment period. Submittals must include the names, mailing addresses and telephone numbers of the commenter/requester and of all persons represented by the commenter/requester. A request for public hearing must also include: (1) The reason why a public hearing is requested. (2) A brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requestor, including how and to what extent such interest would be directly and adversely affected by the permit. (3) Specific references, where possible, to terms and conditions of the permit with suggested revisions. DEQ may hold a public hearing, including another comment period, if public response is significant and there are substantial, disputed issues relevant to the permit.

Only those comments received within this period will be considered. The Director of the DEQ may decide to hold a public hearing if public response is significant.

All pertinent information is on file and may be inspected, and arrangements made for copying by contacting Steve E. Artrip at: Department of Environmental Quality (DEQ), Southwest Regional Office, 355 Deadmore Street, P.O. Box 1688, Abingdon, Virginia 24212. Telephone: 276-676-4808, E-mail: seartrip@deq.virginia.gov.

Following the comment period, the Board will make a determination regarding the proposed reissuance. This determination will become effective, unless the DEQ grants a public hearing. Due notice of any public hearing will be given.

24. Additional Comments:

a. Previous Board Action:

Described in Item 9. above.

b. Staff Comments:

None.

c. Other Comments:

No certified operator is required for the wastewater treatment system.

EPA published "Interim Guidance For Performance-Based Reduction of NPDES Permit Frequencies" (EPA 833-B-96-001) in April 1996. The facility is not eligible for a performance based reduction in monitoring frequency.

During previous permit terms, the Department had issued a waiver from monitoring of certain Part A pollutants listed on Part V of the Form 2C application. This waiver is being extended to the current application.

d. Public Comment:

Drew Laing submitted several questions via email on 5/6/2009. Mr. Laing's questions were satisfactorily addressed in email reply dated 5/7/2009. Please see the VPDES Permit file for details. BEC

Fact Sheet
Page 20
VPDES Permit No. VA0082333
Outfall 001

25. Total Maximum Daily Loads (TMDL):

This facility discharges directly to Chestnut Creek. The stream segment receiving the effluent is listed for non-attainment of sediment and bacteria in Part I of the current approved 303(d) list. The Chestnut Creek segment includes lower Chestnut Creek from Skunk Branch confluence at Gossan Mine site, river mile 8.06, downstream to the confluence with New River. A TMDL was developed by DEQ during 2005 and 2006 and received EPA approval on 06/07/2006. The Virginia State Water Control Board approval date was 03/09/07. The approved TMDL for the Honeywell-Gossan Mine Site is for sediment and the waste load allocation is 6.913 tons/year. This permit has limits of 50 mg/l monthly average and 60 mg/l daily maximum that are in compliance with the TMDL. A TMDL reopener clause is included in this permit.

Attachment 1
Mixing Model
Permit No. VA0082333

Mixing Zone Predictions for Honeywell

Effluent Flow = .252 MGD
Stream 7Q10 = 10.43 MGD
Stream 1Q10 = 8.75 MGD
Stream slope = 0.004 ft/ft
Stream width = 40 ft
Bottom scale = 4
Channel scale = 1

Mixing Zone Predictions @ 7Q10

Depth = .7576 ft
Length = 1475.81 ft
Velocity = .5457 ft/sec
Residence Time = .0313 days

Recommendation:

A complete mix assumption is appropriate for this situation and the entire 7Q10 may be used.

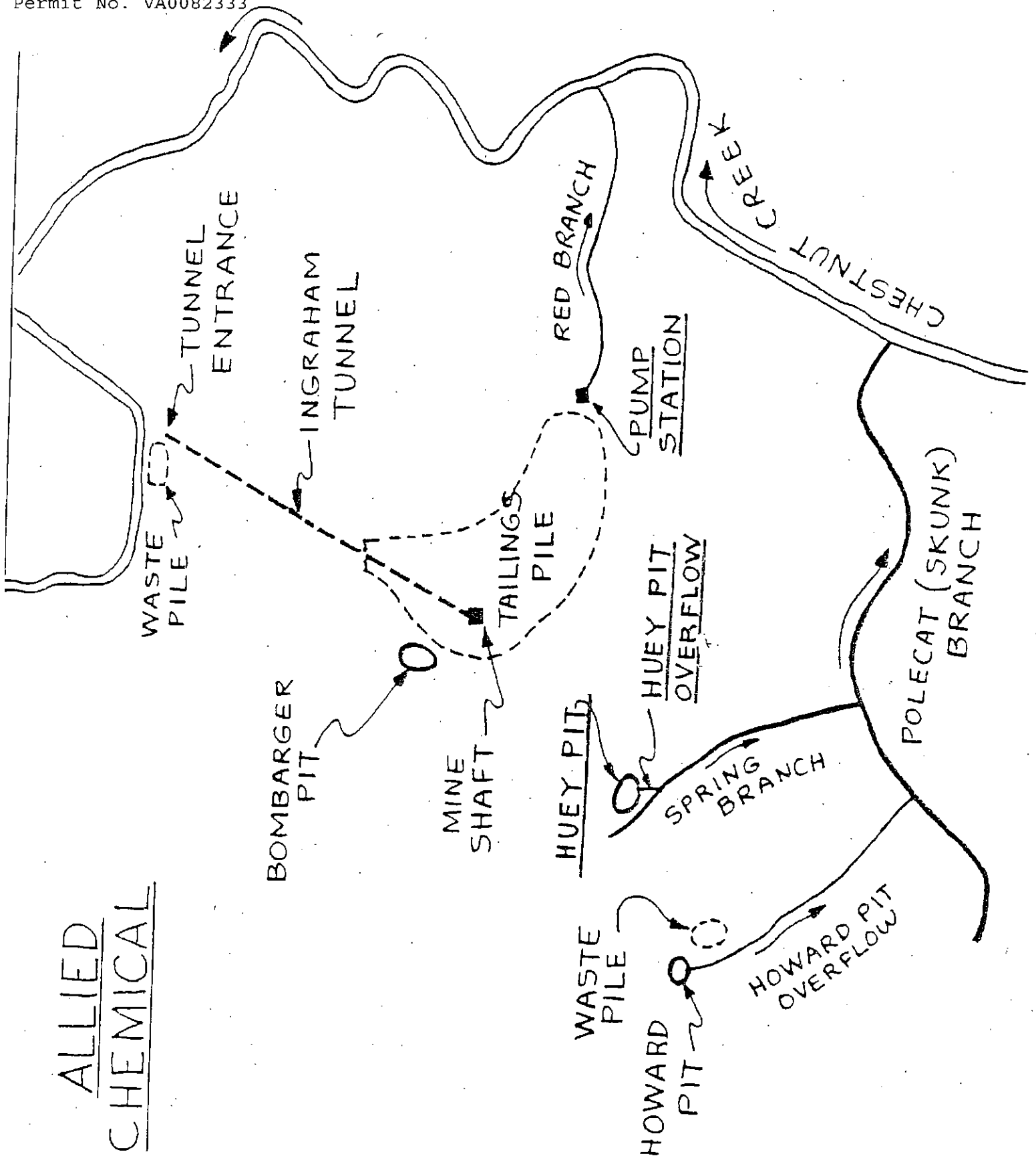
Mixing Zone Predictions @ 1Q10

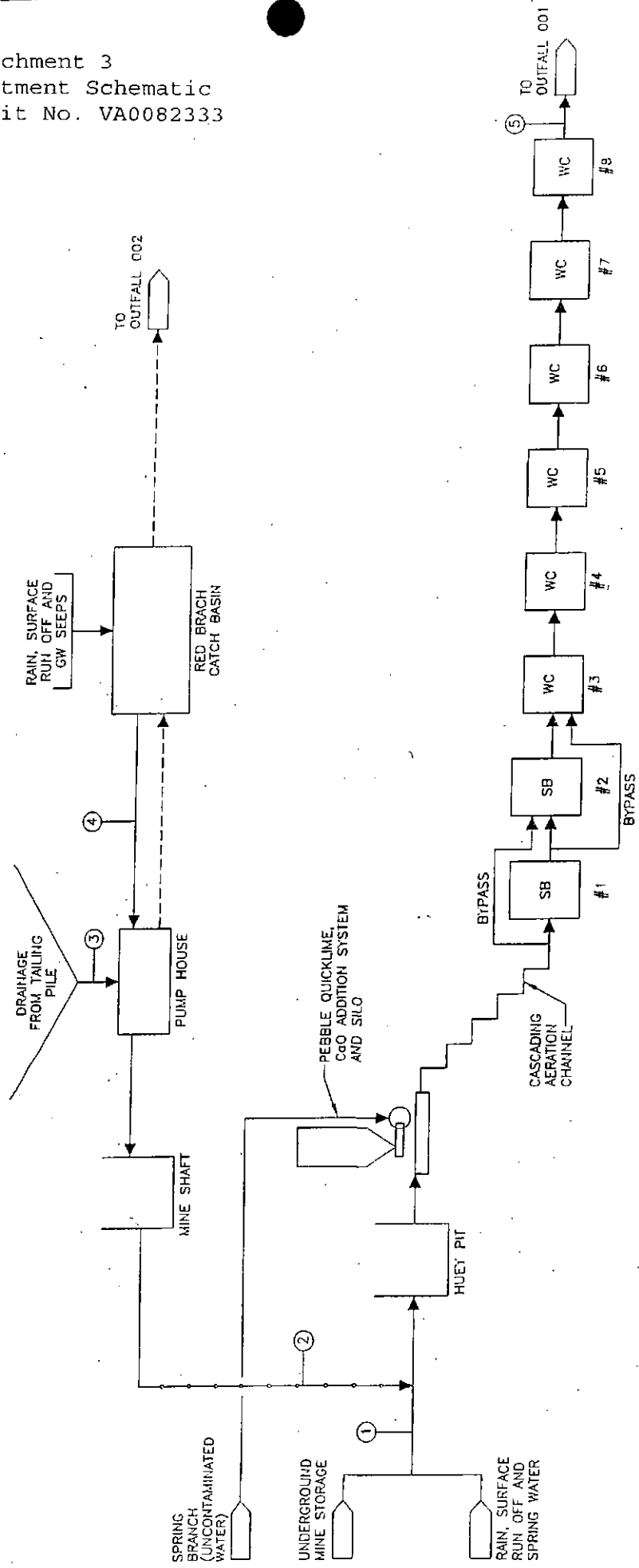
Depth = .6827 ft
Length = 1613.45 ft
Velocity = .5103 ft/sec
Residence Time = .8782 hours

Recommendation:

A complete mix assumption is appropriate for this situation and the entire 1Q10 may be used.

ALLIED
CHEMICAL





ESTIMATED AVERAGE FLOWS
(GALLONS PER DAY)

- ① 42,000
- ② 39,000
- ③ 23,000
- ④ 16,000
- ⑤ 81,000

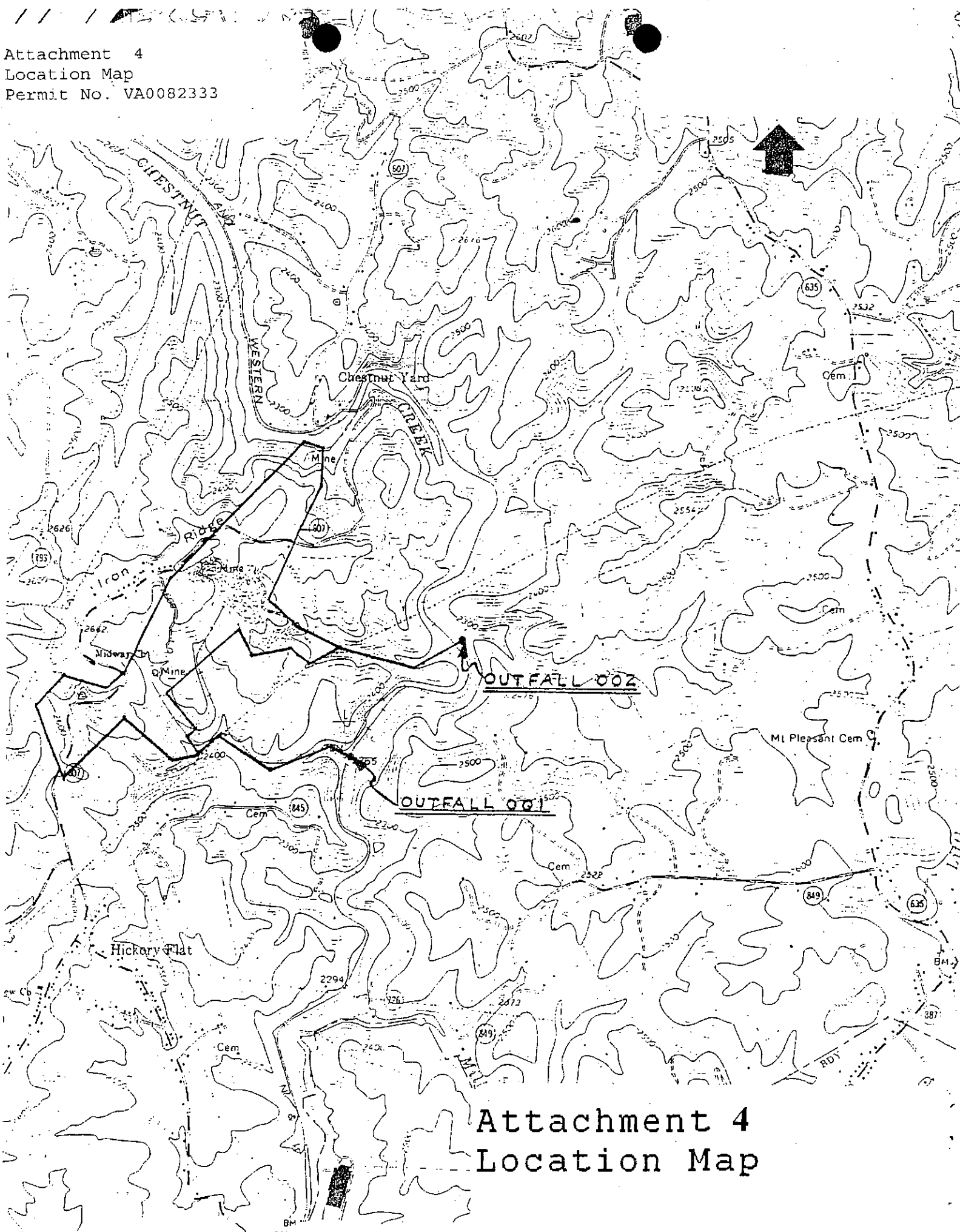
LEGEND

- DIRECTION OF FLOW
- PIPELINE USED ONLY DURING PUMP HOUSE FAILURE
- o- CONNECT THROUGH THE UNDERGROUND MINE WORKINGS
- SB SETTLING BASIN
- WC WETLAND CELL

FIGURE 3

PROCESS FLOW DIAGRAM
FUTURE SYSTEM
GOSSAN MINE SITE

PARSONS



Attachment 4
Location Map

Attachment 5
Statistics-Copper
Permit No. VA0082333
4/2/2009 2:21:01 PM

Facility = Honeywell-Gossan Mine Site
Chemical = Copper
Chronic averaging period = 4
WLAa = 164
WLAc = 144
Q.L. = 1
samples/mo. = 1
samples/wk. = 1

Summary of Statistics:

observations = 1
Expected Value = 25
Variance = 225
C.V. = 0.6
97th percentile daily values = 60.8354
97th percentile 4 day average = 41.5947
97th percentile 30 day average = 30.1513
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

No Limit is required for this material

The data are:

Attachment 5
Statistics-Zinc
Permit No. VA0082333

4/2/2009 2:23:55 PM

Facility = Honeywell-Gossan Mine Site

Chemical = Zinc

Chronic averaging period = 4

WLAa = 1643

WLAc = 1950

Q.L. = 10

samples/mo. = 1

samples/wk. = 1

Summary of Statistics:

observations = 1

Expected Value = 67

Variance = 1616.04

C.V. = 0.6

97th percentile daily values = 163.038

97th percentile 4 day average = 111.473

97th percentile 30 day average = 80.8055

< Q.L. = 0

Model used = BPJ Assumptions, type 2 data

No Limit is required for this material

The data are:

67

Attachment 6
Biological Monitoring Data
Permit No. VA0082333

Sample Date	Acute Toxicity Testing Summary - Discharge 001				
	Vertebrate	Invertebrate	LC50	TUa	% Survival 100% Eff.
6/3/99	<i>P. promelas</i>		>100%	1.0	100%
6/2/99		<i>C. dubia</i>	>100%	1.0	55%
2/13/02		<i>C. dubia</i>	13%	7.7	0%
3/8/02		<i>C. dubia</i>	32%	3.1	0%
8/19/02	<i>P. promelas</i>		85%	1.2	70%
8/19/02		<i>C. dubia</i>	29%	3.4	0%
5/14/03	<i>P. promelas</i>		34%	2.9	0%
5/14/03		<i>C. dubia</i>	20%	5.0	0%
8/18/03	<i>P. promelas</i>		>100%	1.0	65%
8/18/03		<i>C. dubia</i>	17%	5.8	0%
11/20/03	<i>P. promelas</i>		88%	1.14	35%
11/20/03		<i>C. dubia</i>	>100%	1.0	60%
2/27/04	<i>P. promelas</i>		71%	1.4	0%
2/27/04		<i>C. dubia</i>	43%	2.3	0%
1/28/05	<i>P. promelas</i>		39%	2.6	0%
1/28/05		<i>C. dubia</i>	8 %	12.5	0%
3/8/06	<i>P. promelas</i>		>100%	1	100%
3/8/06		<i>C. dubia</i>	<6.25%	>16	0%
9/12/07	<i>P. promelas</i>		>100%	1	65%
9//12/07		<i>C. dubia</i>	28%	3.6	0%
10/21/08	<i>P. promelas</i>		42%	2.3	0%
10/21/08		<i>C. dubia</i>	11%	8.8	0%

Because the test results have identified that the effluent from outfall 001 has the potential to impart toxicity to the discharge, the permit reissuance includes a formal evaluation of whether the discharge has a "reasonable potential" to violate the water quality standards, including the general standard which prohibits the discharge of substances in concentrations which interfere with the designated uses of the receiving waters.

Current agency guidelines (Guidance Memo No. 00-2012) establish a statistical method for establishing whole effluent toxicity (WET) limits which is consistent with the methodology used to establish numeric effluent limitations for other potentially toxic substances. WET limits are written in permits in terms of maximum values, and the units for permit are Toxic Units, which are defined as the reciprocal of the respective LC50 and NOEC decimal values.

For the purposes of evaluating potential toxicity, the in-stream Water Quality Criteria for acute toxicity is 0.3 Toxics Units (TUa), and the in-stream Water Quality Criteria for chronic toxicity is equal to 1.0 Toxicity Units (TUC). However, since the in-stream waste concentration for chronic toxicity is less than one percent, the evaluation of potential whole effluent toxicity will continue to be made solely on the potential acute effects of the wastewater.

Given that the IWC has been determined to be approximately 1.1% during 1Q10 drought flow conditions, the acute dilution would be determined by the following:

$$\text{Acute dilution} = 100/\text{IWCa} = 100/1.1 = 91$$

And the acute wasteload allocation (WLAa) would be defined as:

$$\text{WLAa} = \text{Acute in-stream criterion} \times \text{Acute dilution}$$

$$\text{WLAa} = 0.3 \text{ TUa} \times 91$$

$$\text{WLAa} = 27 \text{ TUa}$$

In accordance with Appendix D of Guidance Memo No. 00-2012 (Page 3 of 17) the calculated WLAa may be used with the Department's WLA.EXE computer modeling program to determine the need for toxicity based effluent limitations, based upon the TUa results of the whole effluent toxicity monitoring program.

The program output of the WLA.EXE model is included below. The results of this analysis conclude that based upon the monitoring results conducted during the last permit term, and the assumptions outlined above, water quality based effluent limits for whole effluent toxicity are unnecessary to protect the water quality standards of Chestnut Creek. Because of the relatively low volumes and concentrations of potential pollutants discharged, and the dilution provided by Chestnut Creek, the discharge poses minimal threat to the water quality standards of the receiving stream.

However, in order to verify the continued conformity with the results of this reasonable potential evaluation, the draft permit proposes to continue annual monitoring of acute whole effluent toxicity for the duration of the next permit term. The monitoring shall be conducted in a manner to achieve an acute endpoint of 7%, and utilize a geometric dilution series.

Attachment 6
Statistics-Whole Efflu
Toxicity
Permit No. VA0082333
3/27/2009 10:19:08 AM

Facility = Honeywell
Chemical = WET
Chronic averaging period = 4
WLAa = 27
WLAc =
Q.L. = 1
samples/mo. = 1
samples/wk. = 1

Summary of Statistics:

observations = 22
Expected Value = 3.86095
Variance = 18.4514
C.V. = 1.112554
97th percentile daily values = 13.9620
97th percentile 4 day average = 8.96017
97th percentile 30 day average = 5.33612
< Q.L. = 0
Model used = lognormal

No Limit is required for this material

The data are:

1
1
7.7
3.1
1.2
3.4
2.9
5
1
5.8
1.14
1
1.4
2.3
2.6
12.5
1
16.1
1
3.6
2.3
8.8

**State "Transmittal Checklist" to Assist in Targeting
Municipal and Industrial Individual NPDES Draft Permits for Review**

Part I. State Draft Permit Submission Checklist

In accordance with the MOA established between the Commonwealth of Virginia and the United States Environmental Protection Agency, Region III, the Commonwealth submits the following draft National Pollutant Discharge Elimination System (NPDES) permit for Agency review and concurrence.

Facility Name: Honeywell International, Inc. - Gossan Mine Site
 NPDES Permit Number: VA0082333
 Permit Writer Name: Steve E. Artrip
 Date: 03/31/2009

Major ☐Minor ☒Industrial ☒Municipal ☐

I.A. Draft Permit Package Submittal Includes:

	Yes	No	N/A
1. Permit Application?	X		
2. Complete Draft Permit (for renewal or first time permit – entire permit, including boilerplate information)?	X		
3. Copy of Public Notice?		X	
4. Complete Fact Sheet?	X		
5. A Priority Pollutant Screening to determine parameters of concern?	X		
6. A Reasonable Potential analysis showing calculated WQBELs?	X		
7. Dissolved Oxygen calculations?			X
8. Whole Effluent Toxicity Test summary and analysis?	X		
9. Permit Rating Sheet for new or modified industrial facilities?			X

I.B. Permit/Facility Characteristics

	Yes	No	N/A
1. Is this a new, or currently unpermitted facility?		X	
2. Are all permissible outfalls (including combined sewer overflow points, non-process water and storm water) from the facility properly identified and authorized in the permit?	X		
3. Does the fact sheet or permit contain a description of the wastewater treatment process?	X		

I.B. Permit/Facility Characteristics – cont.	Yes	No	N/A
4. Does the review of PCS/DMR data for at least the last 3 years indicate significant non-compliance with the existing permit?		X	
5. Has there been any change in streamflow characteristics since the last permit was developed?		X	
6. Does the permit allow the discharge of new or increased loadings of any pollutants?		X	
7. Does the fact sheet or permit provide a description of the receiving water body(s) to which the facility discharges, including information on low/critical flow conditions and designated/existing uses?	X		
8. Does the facility discharge to a 303(d) listed water?	X		
a. Has a TMDL been developed and approved by EPA for the impaired water?	X		
b. Does the record indicate that the TMDL development is on the State priority list and will most likely be developed within the life of the permit?	X		
c. Does the facility discharge a pollutant of concern identified in the TMDL or 303(d) listed water?	X		
9. Have any limits been removed, or are any limits less stringent, than those in the current permit?		X	
10. Does the permit authorize discharges of storm water?		X	
11. Has the facility substantially enlarged or altered its operation or substantially increased its flow or production?		X	
12. Are there any production-based, technology-based effluent limits in the permit?		X	
13. Do any water quality-based effluent limit calculations differ from the State's standard policies or procedures?		X	
14. Are any WQBELs based on an interpretation of narrative criteria?		X	
15. Does the permit incorporate any variances or other exceptions to the State's standards or regulations?		X	
16. Does the permit contain a compliance schedule for any limit or condition?		X	
17. Is there a potential impact to endangered/threatened species or their habitat by the facility's discharge(s)?		X	
18. Have impacts from the discharge(s) at downstream potable water supplies been evaluated?	X		
19. Is there any indication that there is significant public interest in the permit action proposed for this facility?		X	
20. Have previous permit, application, and fact sheet been examined?	X		

Part II. NPDES Draft Permit Checklist

Region III NPDES Permit Quality Review Checklist – For Non-Municipals
(To be completed and included in the record for all non-POTWs)

II.A. Permit Cover Page/Administration	Yes	No	N/A
1. Does the fact sheet or permit describe the physical location of the facility, including latitude and longitude (not necessarily on permit cover page)?	X		
2. Does the permit contain specific authorization-to-discharge information (from where to where, by whom)?	X		

II.B. Effluent Limits – General Elements	Yes	No	N/A
1. Does the fact sheet describe the basis of final limits in the permit (e.g., that a comparison of technology and water quality-based limits was performed, and, the most stringent limit selected)?	X		
2. Does the fact sheet discuss whether “antibacksliding” provisions were met for any limits that are less stringent than those in the previous NPDES permit?	X		

II.C. Technology-Based Effluent Limits (Effluent Guidelines & BPJ)	Yes	No	N/A
1. Is the facility subject to a national effluent limitations guideline (ELG)?		X	
a. If yes, does the record adequately document the categorization process, including an evaluation of whether the facility is a new source or an existing source?			X
b. If no, does the record indicate that a technology-based analysis based on Best Professional Judgement (BPJ) was used for all pollutants of concern discharged at treatable concentrations?	X		
2. For all limits developed based on BPJ, does the record indicate that the limits are consistent with the criteria established at 40 CFR 125.3(d)?			X
3. Does the fact sheet adequately document the calculations used to develop both ELG and /or BPJ technology-based effluent limits?	X		
4. For all limits that are based on production or flow, does the record indicate that the calculations are based on a “reasonable measure of ACTUAL production” for the facility (not design)?			X
5. Does the permit contain “tiered” limits that reflect projected increases in production or flow?		X	
a. If yes, does the permit require the facility to notify the permitting authority when alternate levels of production or flow are attained?			X
6. Are technology-based permit limits expressed in appropriate units of measure (e.g., concentration, mass, SU)?	X		

II.C. Technology-Based Effluent Limits (Effluent Guidelines & BPJ) – cont.

	Yes	No	N/A
7. Are all technology-based limits expressed in terms of both maximum daily, weekly average, and/or monthly average limits?	X		
8. Are any final limits less stringent than required by applicable effluent limitations guidelines or BPJ?		X	

II.D. Water Quality-Based Effluent Limits

	Yes	No	N/A
1. Does the permit include appropriate limitations consistent with 40 CFR 122.44(d) covering State narrative and numeric criteria for water quality?	X		
2. Does the record indicate that any WQBELs were derived from a completed and EPA approved TMDL?		X	
3. Does the fact sheet provide effluent characteristics for each outfall?	X		
4. Does the fact sheet document that a "reasonable potential" evaluation was performed?	X		
a. If yes, does the fact sheet indicate that the "reasonable potential" evaluation was performed in accordance with the State's approved procedures?	X		
b. Does the fact sheet describe the basis for allowing or disallowing in-stream dilution or a mixing zone?	X		
c. Does the fact sheet present WLA calculation procedures for all pollutants that were found to have "reasonable potential"?	X		
d. Does the fact sheet indicate that the "reasonable potential" and WLA calculations accounted for contributions from upstream sources (i.e., do calculations include ambient/background concentrations where data are available)?	X		
e. Does the permit contain numeric effluent limits for all pollutants for which "reasonable potential" was determined?	X		
5. Are all final WQBELs in the permit consistent with the justification and/or documentation provided in the fact sheet?	X		
6. For all final WQBELs, are BOTH long-term (e.g., average monthly) AND short-term (e.g., maximum daily, weekly average, instantaneous) effluent limits established?	X		
7. Are WQBELs expressed in the permit using appropriate units of measure (e.g., mass, concentration)?	X		
8. Does the fact sheet indicate that an "antidegradation" review was performed in accordance with the State's approved antidegradation policy?	X		

II.E. Monitoring and Reporting Requirements

	Yes	No	N/A
1. Does the permit require at least annual monitoring for all limited parameters?	X		
a. If no, does the fact sheet indicate that the facility applied for and was granted a monitoring waiver, AND, does the permit specifically incorporate this waiver?			X
2. Does the permit identify the physical location where monitoring is to be performed for each outfall?	X		
3. Does the permit require testing for Whole Effluent Toxicity in accordance with the State's standard practices?	X		

II.F. Special Conditions

	Yes	No	N/A
1. Does the permit require development and implementation of a Best Management Practices (BMP) plan or site-specific BMPs?		X	
a. If yes, does the permit adequately incorporate and require compliance with the BMPs?			X
2. If the permit contains compliance schedule(s), are they consistent with statutory and regulatory deadlines and requirements?			X
3. Are other special conditions (e.g., ambient sampling, mixing studies, TIE/TRE, BMPs, special studies) consistent with CWA and NPDES regulations?	X		

II.G. Standard Conditions

II.G. Standard Conditions		Yes	No	N/A
1. Does the permit contain all 40 CFR 122.41 standard conditions or the State equivalent (or more stringent) conditions?		X		
List of Standard Conditions – 40 CFR 122.41				
Duty to comply	Property rights	Reporting Requirements		
Duty to reapply	Duty to provide information	Planned change		
Need to halt or reduce activity	Inspections and entry	Anticipated noncompliance		
not a defense	Monitoring and records	Transfers		
Duty to mitigate	Signatory requirement	Monitoring reports		
Proper O & M	Bypass	Compliance schedules		
Permit actions	Upset	24-Hour reporting		
		Other non-compliance		
2. Does the permit contain the additional standard condition (or the State equivalent or more stringent conditions) for existing non-municipal dischargers regarding pollutant notification levels [40 CFR 122.42(a)]?		X		

Part III. Signature Page

Based on a review of the data and other information submitted by the permit applicant, and the draft permit and other administrative records generated by the Department/Division and/or made available to the Department/Division, the information provided on this checklist is accurate and complete, to the best of my knowledge.

Name	<u>Steve E. Artrip</u>
Title	<u>Environmental Engineer Senior</u>
Signature	<u><i>Steve E. Artrip</i></u>
Date	<u>03/31/2009</u>